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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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01/24/2005

Peter Tass

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K.F. ROSS P.C.

5683 RIVERDALE AVENUE

SUITE 203 BOX 900

BRONX, NY 10471-0900

EXAMINER

D ABREU, MICHAEL JOSEPH

ART UNIT

PAPER NUMBER

4153

MAIL DATE

DELIVERY MODE

03/10/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/522,933	Applicant(s) TASS, PETER	
	Examiner MICHAEL D ABREU	Art Unit 4153	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on February 12, 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on January 24, 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. PCT/DE03/02250.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01/24/05, 02/12/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. The phrase "maximum physiological and/or pathological brain activity" in claim 6 is a relative term which renders the claim indefinite. The measure or degree of brain activity which is defined as the maximum level is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 7, 9-19, 24-33, & 37 are rejected under 35 U.S.C. 102(b) as being anticipated by John (3780724).
3. Regarding Claims 1-5, John discloses a device capable of testing a patient for neuronal rhythmic activity comprising of a control unit (Column 3, lines 15-28; Claim 1), stimulator as a speaker (Column 3, lines 29-34), means for detecting brain activity

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through scalp EEG electrodes (Column 3, lines 15-20), which is connected to the control unit by an amplifier (Column 3, lines 20-27). Furthermore, the device has feedback of patient reaction and connected to the control unit (Column 2, lines 21-47).

4. Concerning Claims 7, 8, & 10, John's device carries out frequency scans (Column 4, lines 15-20), quantifies neuronal activity (Column 2, lines 23-30), and is designed to have the stimulator directly connected and activated by the control unit (Column 3, lines 62-67).

5. With respect to Claims 11-13, the apparatus as disclosed by John describes a T test computer, capable of investigating signals measured by the sensors through the use of the wavelet analysis (Column 4, lines 15-20). Furthermore, the device registers the change in the amplitude of the rhythm to be excited by recording that response (Column 4, lines 23-25).

6. Claims 14 & 15, John's device has various testing methods including means for carrying out an entrainment (Column 7, lines 5-20) and desynchronization (Column 7, lines 44-50).

7. Regarding Claims 16-19, the T test computer in John's device is configured to test the quality of the entrainment (Column 4, lines 16-40) by determining the phase of the neuronal rhythms by matching the signals. The phase and amplitude of the neuronal activity is then evaluated (Column 4, 41-62).

8. With respect to Claims 24-27 and 33, John's device determines the vulnerable phase of the neural signal as defined by the applicant by varying the time spacing between the last excitation of the entrainment and the desynchronizing excitation signal

(Column 8, lines 10-24). In one method, the device also changes the variation in time spacing for different values of intensity and in another method, increases the intensity in equidistant steps (Column 8, lines 18-22).

9. Regarding Claims 28 and 29, the prior art enables optimum stimulation parameters to be determined through the comparison of the results of multiple testing stimulations from where a minimization of the amplitude can be obtained (Columns 7-9).

10. Claim 37 is anticipated by John's device as the stimulation is monitored by a program, in conjunction with a timer and switch (Column 3, 34-40).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over John (3780724). John teaches the method as substantially as claimed. However, John does

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not specifically disclose that his device evokes the maximum physiological/pathological brain activity. The applicant fails to disclose how the claimed device can evoke a measurable maximum brain activity; therefore, the claim is rejected over the prior art as it is capable of evoking the same level of brain activity.

14. Claims 9 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over John (3780724) in view of Nagano (5771443). John teaches the method as substantially as claimed. However, John does not disclose specific means of quantifying neuronal activity or detecting stimulation parameters as disclosed. The applicant fails to disclose a clear or definitive advantage behind using the Hilbert transformation, matching a sine function, or integrating amplitude of power spectrum over frequency band over any other form of wavelet analysis. Nagano discloses the use of Hilbert transformation and other forms of wavelet analysis in the measurement and analysis of frequency deviation (Column 7). The claim is rejected as being obvious to one of ordinary skill in the art at the time the invention was made to modify the method taught by John, in view of the wavelet analysis of Nagano, to provide a more detailed examination of the neural activity.

15. In reference to Claim 23, John teaches the method as substantially as claimed. Although the amplitude response is analyzed by John in order to find marked differences between the responses (Column 7, lines 30-43), John does not plot the data as amplitude resetting curves in the analysis of neuronal activity. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to plot these data points in order to visually present the responses as a figure rather than

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numbers. The applicant makes a graph of the amplitude data points - but the computer is still analyzing the data points in the same manner as the prior art. Plotting a set of data points on a graph to visually present a curve is common in basic experimentation and is not any sort of improvement.)

16. Claims 20-22 and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over John (3780724) in view of Czeisler (5545192). John teaches the method as substantially as claimed. However, John device does not employ the use of phase resetting curves in neural analysis. Czeisler uses phase resetting curves in the analysis of circadian rhythm. It would have been obvious to one of ordinary skill in the art to modify the method taught by John, to include phase resetting curves in order to project and analyze the neural activity of the patient. Furthermore, John's device discloses the use of a T-test computer which is able to quantitatively analyze the response and phase dynamics of the desynchronizing neuronal activity both before and after stimulation (Columns 4-6).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael D'Abreu whose telephone number is (571)270-3816. The examiner can normally be reached on Monday - Friday, 0600 - 1630 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jackson can be reached on (571) 272-4697. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MD
2/29/08

/Michael D'Abreu/
Examiner, Art Unit 4153

/Gary Jackson/
Supervisory Patent Examiner
Art Unit 4153